
Documentation, Codebook, and Frequencies

Surplus Sera Laboratory Component:

Optical density to Cytomegalovirus IgG and
IgM and RFV Index for IgG avidity
(NHANES III Surplus Sera)

Survey Years:
1988 to 1994

SAS Export File:
SPSCMVOD.XPT



First Published: May 2006
Last Revised: N/A

NHANES III Data Documentation

Laboratory Assessment: Optical density to Cytomegalovirus IgG and IgM and RFV Index for IgG avidity (NHANES III Surplus Sera)

Years of Coverage: 1988–1994

First Published: May 2006

Last Revised: N/A

Component Description

Among women ages 12-49 years, Cytomegalovirus (CMV) antibody testing of stored sera specimens from NHANES III (1988–1994) was conducted. For these participants, CMV IgG, IgM and IgG avidity were measured; these summary data were previously released. This data release contains the optical density measures for IgG and IgM and the RFV Index values for the IgG avidity.

Eligible Sample

Women participants aged 12-49 years from of NHANES III with stored sera (N = 6076).

Description of Laboratory Methodology

CMV specific IgG was measured with an ELISA by Quest International, Inc., Miami FL. Sera with values near the ELISA cutoff (approx 7% of total) were confirmed with a second ELISA assay by bioMerieux, Inc., Durham, NC (OD_IgG_V). Optical Densities for both IgG assays are reported.

CMV specific IgM was measured with an ELISA by bioMerieux, Inc., Durham, NC. Optical Density for the IgM test is reported.

Optical Densities for IgG and IgM tests approximately correspond to antibody titer; a low and positive optical density indicates low antibody titer and a high optical density indicates high antibody titer.

Sera that were IgG and IgM positive were tested for IgG avidity, along with an equal number of sera that were IgG positive and IgM negative. CMV IgG avidity was measured with an ELISA by bioMerieux, Inc., Durham, NC. 1= low avidity defined as RFV_INDEX < 0.8 and 2= High avidity defined as RFV_INDEX >= 0.8. IgG avidity is a measure of the overall strength of binding of the IgG antibody to the antigen. The more time that has elapsed since primary infection, the stronger the bond will be between IgG and the antigen. Low IgG avidity indicates a recent (primary) infection of less than 3-6 months. High IgG avidity suggests the infection occurred more than 6 months ago. Those who are IgM positive and have high IgG avidity are likely experiencing either a reactivation or reinfection.

Laboratory Quality Control and Monitoring

Commercial reagents were used for all CMV testing. All QC procedures recommended by the manufacturers were followed.

Data Processing and Editing

Data was received after all the antibody testing was complete. The data were not edited.

Data Access: All data are publicly available.

Analytic Notes

There are four variables:

CMPODqV : CMV IgG Optical Density

From the VIDAS by bioMerieux, Inc., Durham, NC.

Measured in AU/ml which stands for Arbitrary units/ml

Continuous variable - Values range from 4 to 400

CMPODqT: CMV IgG Optical Density

From the Triturus by Quest International, Inc., Miami FL.

Measured in absorbance units/ml.

Continuous variable - Values range from 0.095 to 20.48

88888 = Out of range; Defined as when a value is over the detectable range or > 3.00

CMPODM: CMV IgM Optical Density

Measured in AU/ml which stands for Arbitrary units/ml

Continuous variable - Values range from 0 to 2.99

CMPRFPX: Relative Florescent Value

Continuous variable - Values range from 0.3 to 1.4

References

1. Starr, S.E., and Friedman, H.M. "Human Cytomegalovirus", Chapter 65 in Manual of Clinical Microbiology, fourth edition, edited by E.H. Lennette, A. Balows, W.J. Hausler, Jr., and H.J. Shadomy, American Society for Microbiology, pp 711-719. 1985.
2. Peckham, C.S. "Cytomegalovirus in the neonate". Journal of Antimicrobial Chemotherapy. 23:17-21. 1989.
3. Joassin, L., and Reginster, M. "Elimination of nonspecific cytomegalovirus immunoglobulin M activities in the enzyme-linked immunosorbent assay by using anti-human immunoglobulin G". Journal of Clinical Microbiology. 23:576-581. 1986.

Locator Fields

Title: Optical density to Cytomegalovirus IgG and IgM and RFV Index for IgG avidity

Contact Number: 1-866-441-NCHS

Years of Content: 1988-1994

First Published: May 2006

Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Antibody to Cytomegalovirus (CMV)

Record Source: NHANES III

Survey Methodology: NHANES III is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

Medium: NHANES Web site; SAS transport files

**National Health and Nutrition Examination Survey
Codebook for Data Production (1988-1994)
(NHANES III)**

**Optical density to Cytomegalovirus IgG and IgM and RFV Index for
IgG avidity (SPSCMVOD)
Person Level Data**

First Release: May 2006

Last Revised: N/A



SEQN	Target
	F(12 Yrs. to 49 Yrs.)
Hard Edits	SAS Label
	Respondent sequence number
English Text: Respondent sequence number.	
English Instructions:	

CMPODM		Target		
		F(12 Yrs. to 49 Yrs.)		
Hard Edits		SAS Label		
		CMV IgM optical density		
English Text: CMV IgM optical density				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
0 to 2.99	Range of Values	6074	6074	
.	Missing	2	6076	

CMPODgV		Target		
		F(12 Yrs. to 49 Yrs.)		
Hard Edits		SAS Label		
		CMV IgG optical density from VIDAS		
English Text: CMV IgG optical density from VIDAS				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
4 to 400	Range of Values	586	586	
.	Missing	5490	6076	

CMPODgT		Target		
		F(12 Yrs. to 49 Yrs.)		
Hard Edits		SAS Label		
		CMV IgG optical density from triturus		
English Text: CMV IgG optical density from triturus				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
0.095 to 20.48	Range of Values	3877	3877	
88888	Value over the detectable range	1922	5799	
.	Missing	277	6076	

CMPRFPX		Target		
		F(12 Yrs. to 49 Yrs.)		
Hard Edits		SAS Label		
		Relative Florescent Value		
English Text: Relative Florescent Value				
English Instructions:				
Code or Value	Description	Count	Cumulative	Skip to Item
0.31 to 1.36	Range of Values	255	255	
.	Missing	5821	6076	